L 10230-66
ACC NR: AP6002411 SOURCE CODE: UR/0105/64/000/010/0087/0088

AUTHOR: Greben', I. I.; Iyerusalimov, M. Ye.; Kondrat, B. N.; Nesterenko, A. D.; Pavlov, V. M.; Postnikov, I. M.; Kholmskiy, V. G.; Chuzhenko, I. N.

32
B

ORG: none

TITLE: Professor I. K. Fedchenko (60th birthday and 35th anniversary of his scientific and pedagogical activity)

SOURCE: Elektrichestvo, no. 10, 1964, 87-88

TOPIC TAGS: electric engineering personnel, electric engineering

ABSTRACT: September 26, 1964 was the 60th birthday of Ivan Kirilovich Fedchenko, Doctor of Technical Sciences and Professor in Charge of the Chair "Tekhnika vy*sokikh napryazheniy" (High-voltage engineering) at the Kiev, Order of Lenin, Polytechnical Institute. His entire career was spent at this institute. He successfully defended his dissertation in 1936 and became a reader (docent). He has published more than 60 scientific papers. Between 1934 and 1940 he set up production of domestic high-voltage capacitors. Much of his activity has been devoted to capacitor problems. After the war he worked on the problem of earth conductivity and use of earth as a return in power transmission. Fedchenko took his doctorate in 1951 defending a dissertation on earth as a conductor, which was

Card 1/2 UDC: 621.3.027.3

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later published as the monograph "Teoriya zemlyanogo provoda" (Theory of earth as a conductor). He has worked extensively on insulations. His most recent work is on electric arcs. For his achievements Fedchenko holds two orders of the Red Banner of Labor, in addition to several military awards. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09 / SUBM DATE: none

Card 2/2

IERUSALIMSKAYA, L.A.; KAZANIN, V.I.

Intravital diagnosis of primary pericardial tumors. Terap. arkh. 35 no.9:106-109 S'63 (MIRA 17:4)

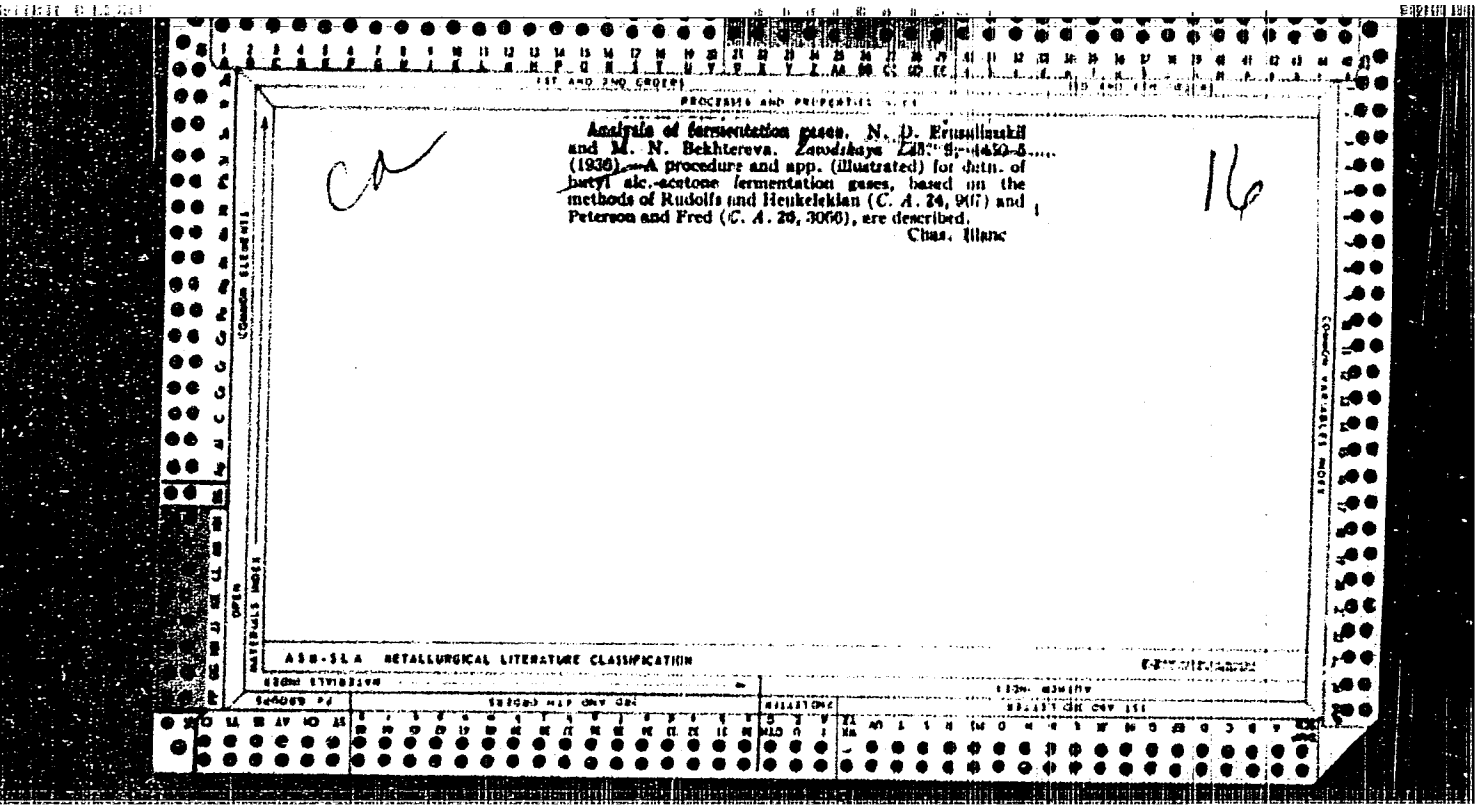
1. Iz kliniki gospital'noy terapii (zav. - prof. A.A. Demin) Novosibirskogo meditsinskogo instituta i prozektury 29-y bol'nitsy Novosibirska (glavnyy vrach I.F. Duman).

JYERUSALIMSKAYA, M.P.

Using hydrophobic lime in laying pavements. Avt. dor. 28 no.9:17-19 S '65. (MIRA 18:10)

GREBEN', I.I.; IYERUSALIMOV, M.Ye.; KONDRA, B.N.; NESTERENKO, A.D.; PAVLOV, V.M.; POSTNIKOV, I.M.; KHOLMSKIY, V.G.; CHIZHENKO, I.M.

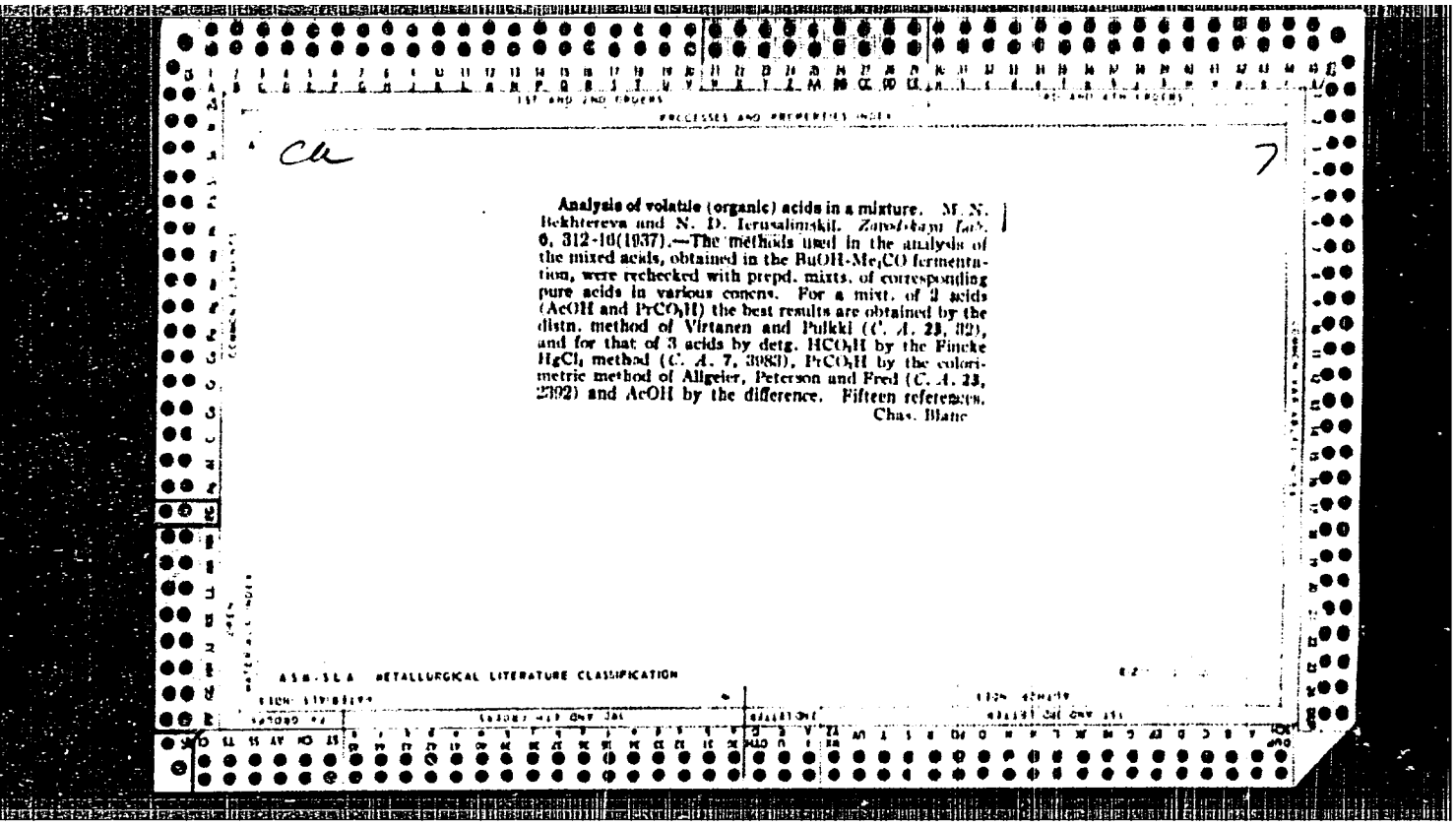
Ivan Kirillovich Fedchenko, 1904-; on his 60th birthday and the 35th anniversary of his theoretical and educational work. Elektrichestvo no.10:87-88 O '64. (MIRA 17:12)



Analysis of fermentation gases. N. D. Ermullinskii and M. N. Bekhtereva. *Zavodskaya Lab.* 9:1450-5 (1936).—A procedure and app. (illustrated) for detn. of butyl alc.-acetone fermentation gases, based on the methods of Rudolfs and Henkelekian (*C. A.* 24, 907) and Peterson and Fred (*C. A.* 26, 3066), are described.

Chas. Blanc

16

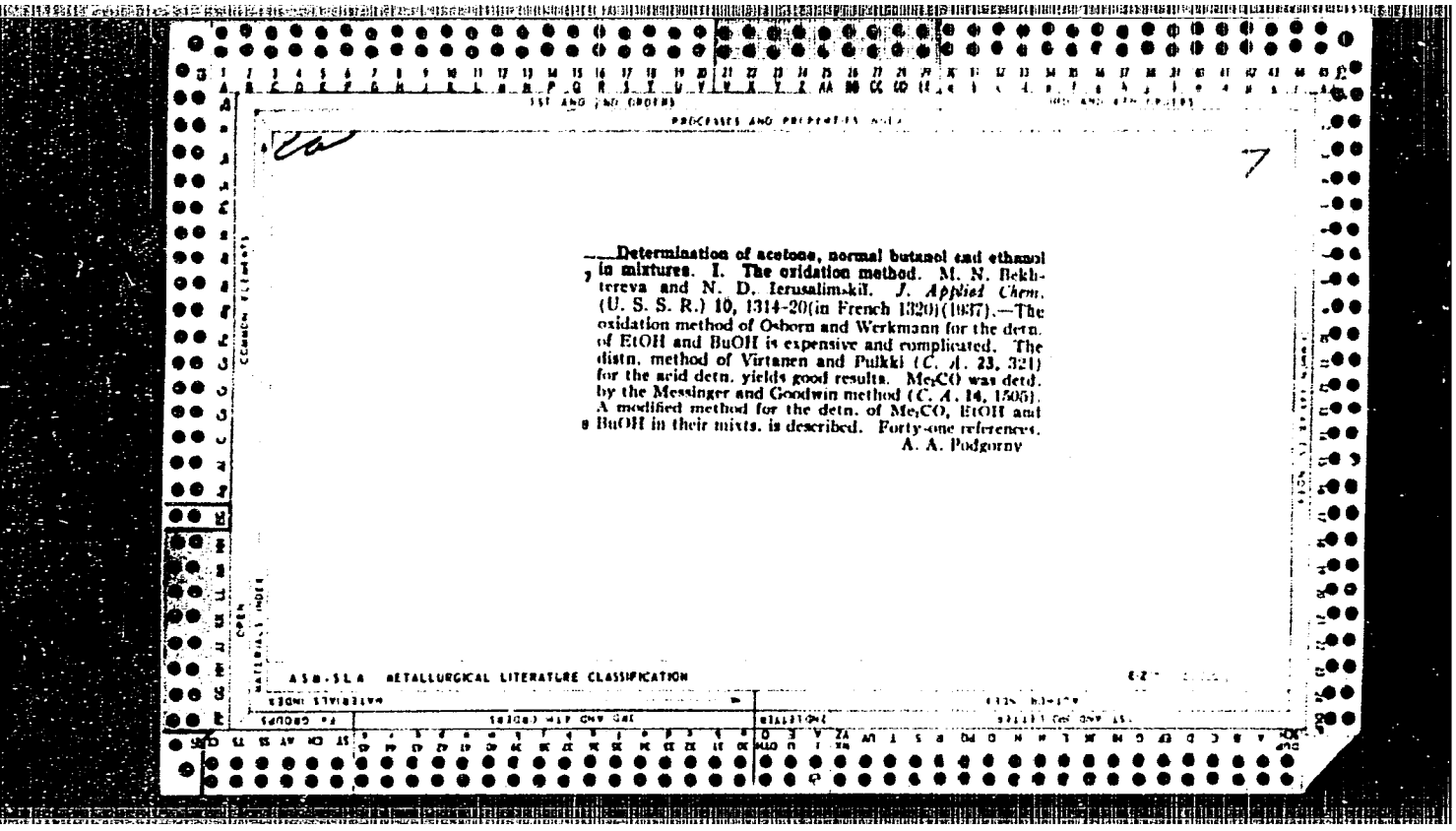


Cl

7

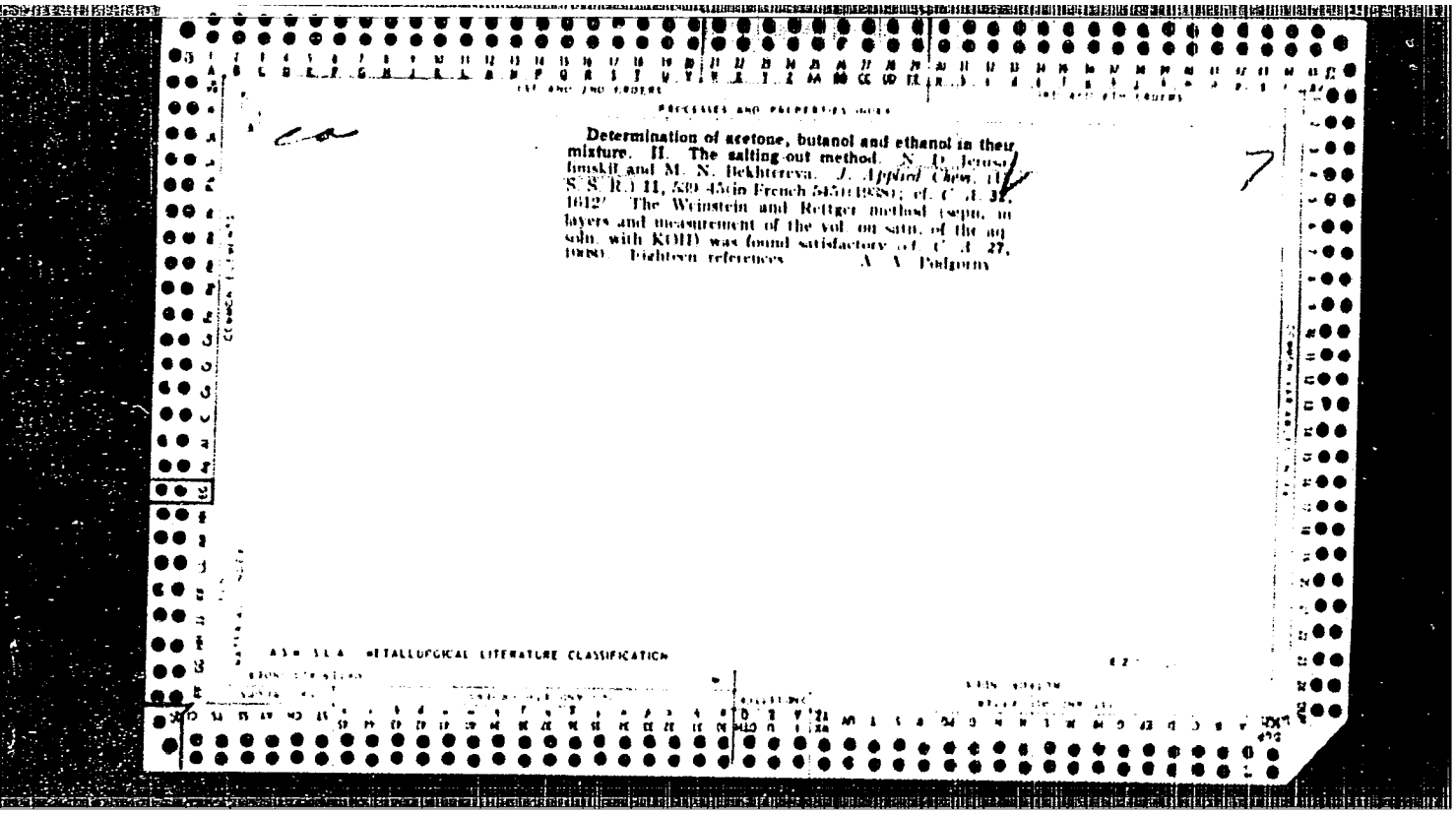
Analysis of volatile (organic) acids in a mixture. M. N. Bekhtereva and N. D. Ierusalimskii. *Zavodskaya Lab.* 6, 312-16(1937).—The methods used in the analysis of the mixed acids, obtained in the BuOH-Me_2CO fermentation, were rechecked with prepd. mixts. of corresponding pure acids in various concns. For a mixt. of 2 acids (AcOH and $PrCO_2H$) the best results are obtained by the distn. method of Virtanen and Pulkki (*C. A.* **23**, 822), and for that of 3 acids by detg. HCO_2H by the Fincke $HgCl_2$ method (*C. A.* **7**, 3083), $PrCO_2H$ by the colorimetric method of Allgeier, Peterson and Fred (*C. A.* **23**, 2392) and AcOH by the difference. Fifteen references.
Chas. Blatz

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

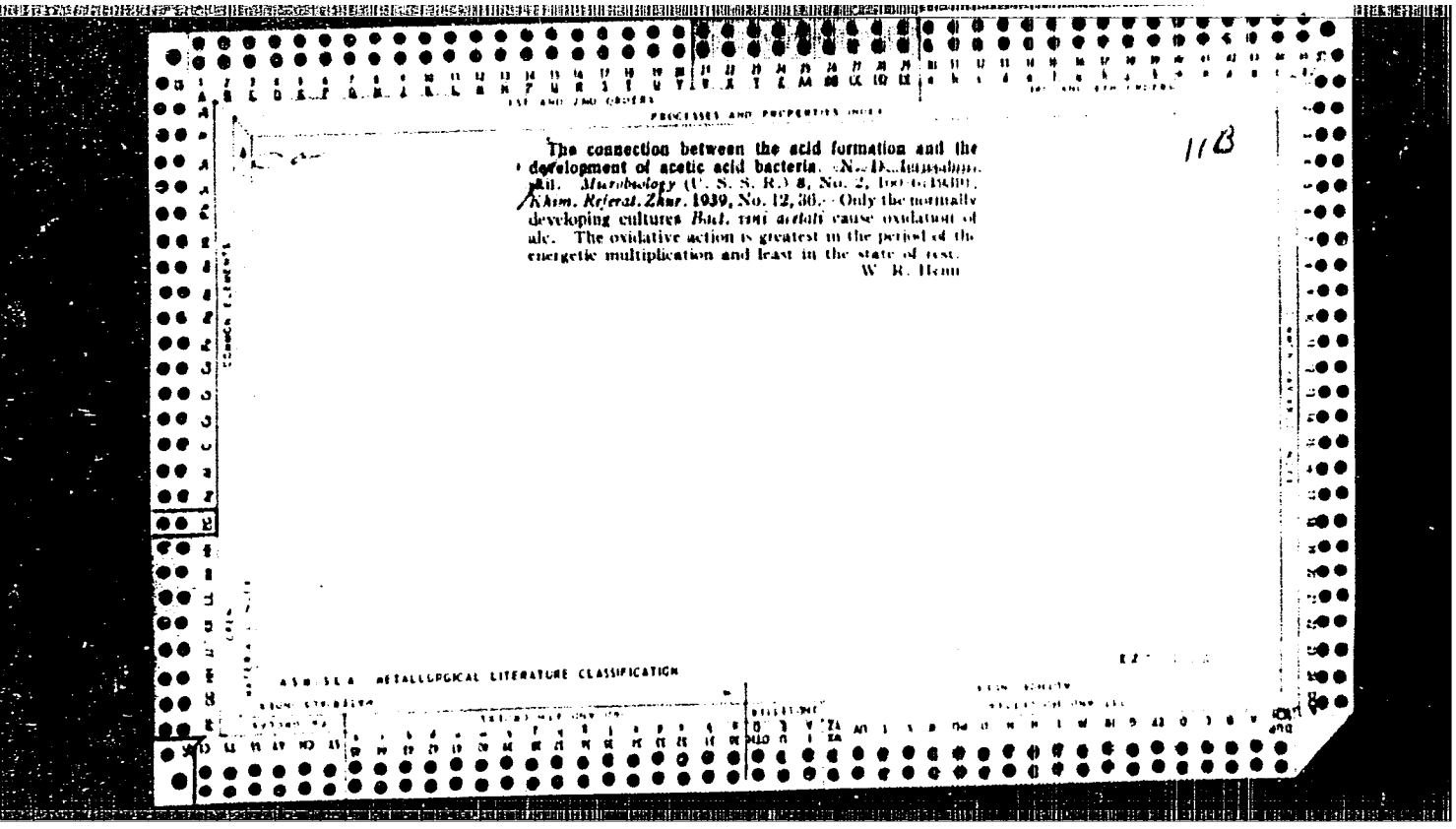


——Determination of acetone, normal butanol and ethanol in mixtures. I. The oxidation method. M. N. Bekhtereva and N. D. Ierusalimskil. *J. Applied Chem.* (U. S. S. R.) 10, 1314-20(in French 1320)(1937).—The oxidation method of Osborn and Werkmann for the detn. of EtOH and BuOH is expensive and complicated. The distn. method of Virtanen and Pulkki (*C. A.* 23, 321) for the acid detn. yields good results. Me_2CO was detd. by the Messinger and Goodwin method (*C. A.* 14, 1505). A modified method for the detn. of Me_2CO, EtOH and BuOH in their mixts. is described. Forty-one references.

A. A. Podgorny



Determination of acetone, butanol and ethanol in their mixture. II. The salting-out method. N. D. Jerusalimskii and M. N. Bekhtereva. *J. Applied Chem. (U.S.S.R.)* 11, 539-45(in French 545)(1938); cf. *C. A.* 32, 1612. The Weinstein and Rettger method (*ibid.*, 11 layers and measurement of the vol. on satn. of the aq. soln. with KOH) was found satisfactory. cf. *C. A.* 27, 1980. Eighteen references. A. V. Polgunov



PROCESSES AND PREPARATION INDEX

118

The connection between the acid formation and the development of acetic acid bacteria. N. D. Iljinskaya. Bull. *Microbiology* (U. S. S. R.) **8**, No. 2, [illegible]. *Chem. Referat. Zhur.* **1939**, No. 12, 30.—Only the normally developing cultures *Bact. rancidi* cause oxidation of ale. The oxidative action is greatest in the period of the energetic multiplication and least in the state of rest.

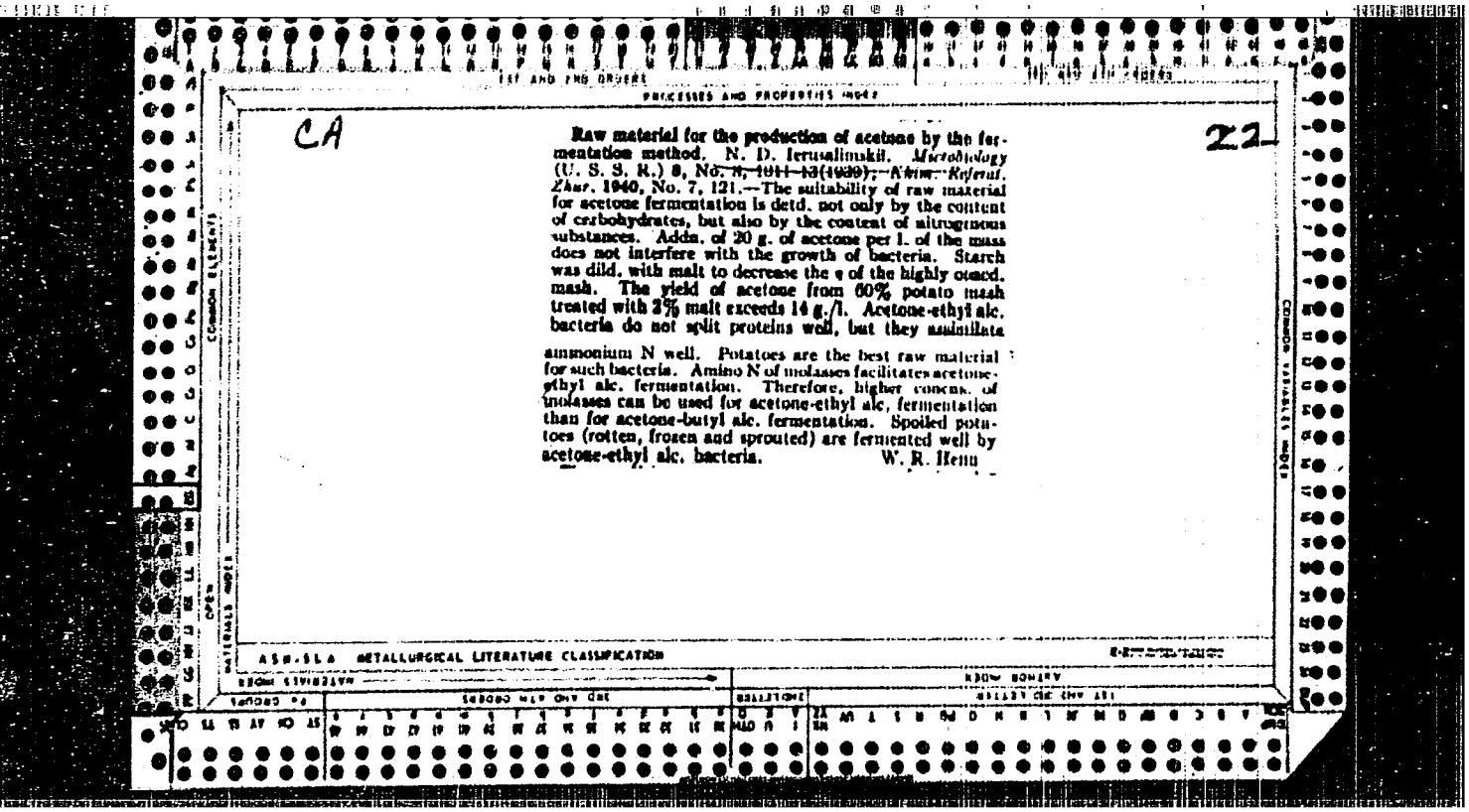
W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Ist MOSCOW STATE UNIV., CHAIR OF MICR., MOSCOW

IERUSALIMSKIY, N. D.

"Relation between the Formation of Acid and the Development of Acetic Bacteria", Mikrobiol, 8 No. 2, 1939. Ist Moscow State Univ., Chair of Micr., Moscow, -1939-.



CA

22

Raw material for the production of acetone by the fermentation method. N. D. Ierusalimskii. *Microbiology* (U. S. S. R.) 8, No. 4, 411–13 (1939); *Abstr. Referat. Zhur.* 1940, No. 7, 121.—The suitability of raw material for acetone fermentation is detd. not only by the content of carbohydrates, but also by the content of nitrogenous substances. Addn. of 20 g. of acetone per l. of the mass does not interfere with the growth of bacteria. Starch was dild. with malt to decrease the c of the highly concd. mash. The yield of acetone from 60% potato mash treated with 2% malt exceeds 14 g./l. Acetone-ethyl alc. bacteria do not split proteins well, but they assimilate ammonium N well. Potatoes are the best raw material for such bacteria. Amino N of molasses facilitates acetone-ethyl alc. fermentation. Therefore, higher concns. of molasses can be used for acetone-ethyl alc. fermentation than for acetone-butyl alc. fermentation. Spoiled potatoes (rotten, frozen and sprouted) are fermented well by acetone-ethyl alc. bacteria.

W. R. Henn

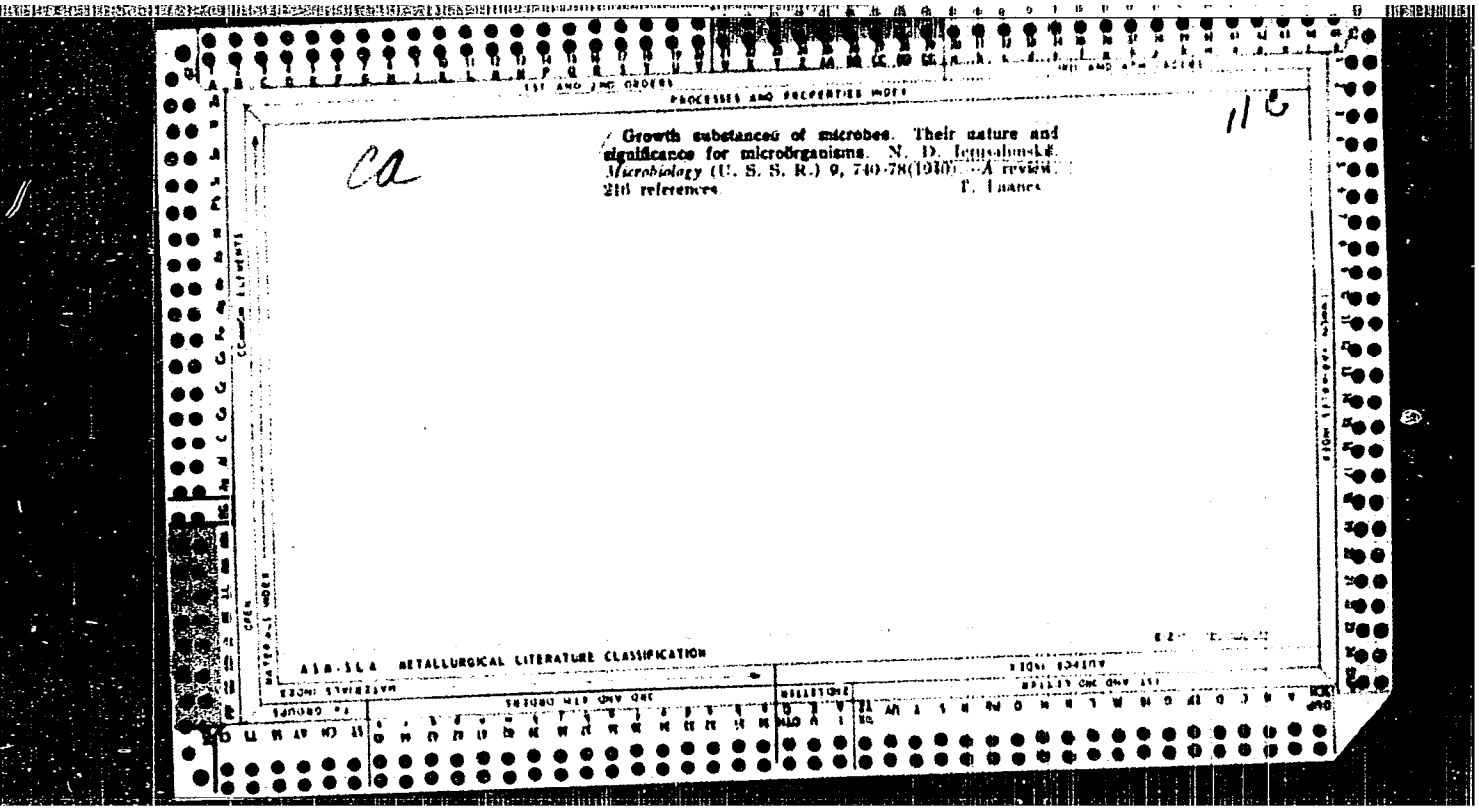
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

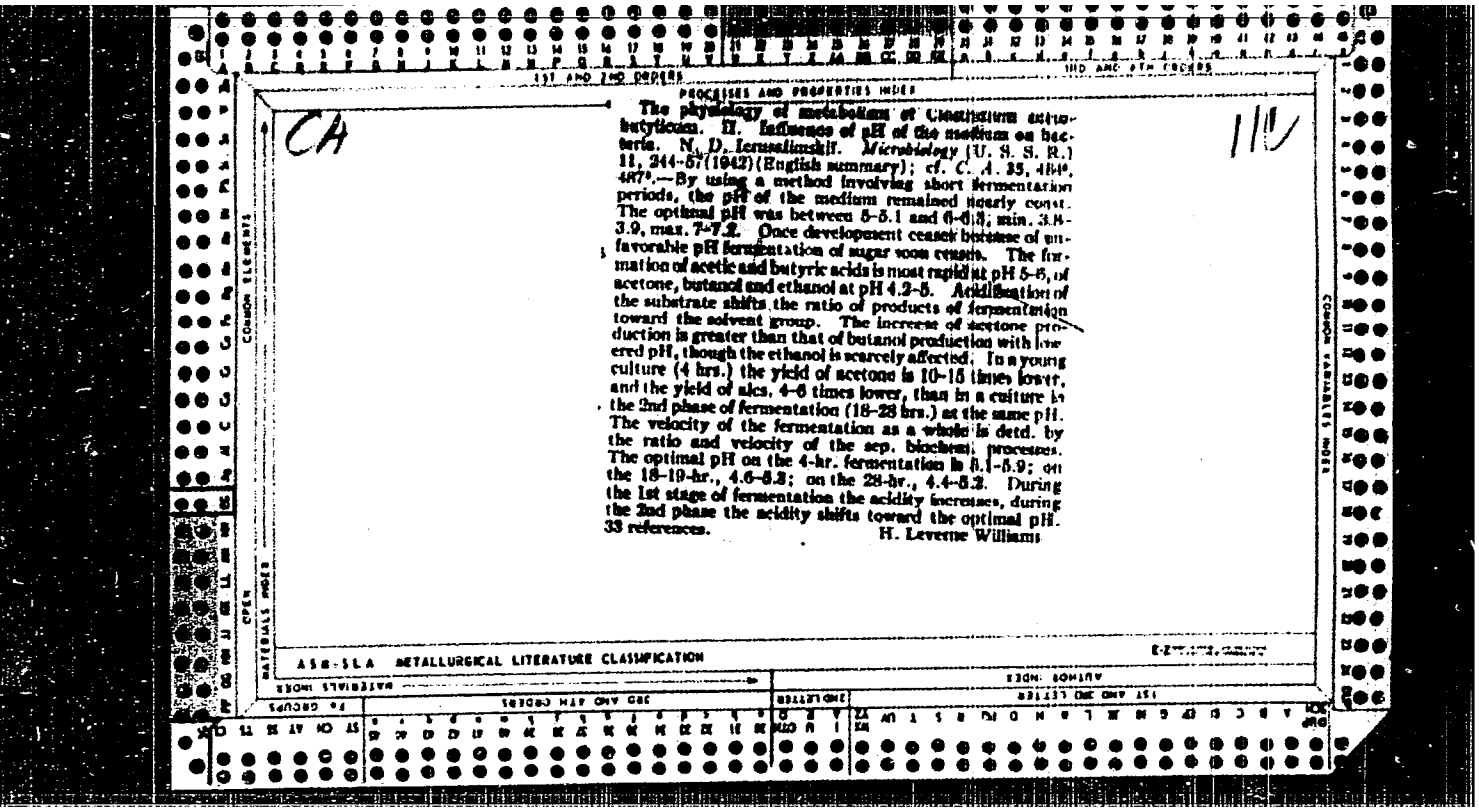
11 C

The physiology of metabolism in Clostridium acetobutylicum. I. The composition of nitrogen sources as a factor in the depression of the second phase of fermentation. N. D. Ierusalimskii. *Microbiology* (U. S. S. R.) 9, 158-70(in English, 170-7)(1940); cf. C. A. 31, 3508[4]. In the first phase of acetone-BuOH fermentation the bacteria reproduce rapidly and acids accumulate. In the 2nd phase bacterial growth is retarded and partial autolysis ensues, whereby the basic fermentation products are formed. The intensity of the first phase is linked with the N sources in the substrate, i. e., with their amino acid and growth-substance content, and their assimilability by the bacteria. The intensity of the 2nd phase does not always correspond with that of the first. The 2nd phase is initiated by the appearance of bacteria with a new enzymic system necessary for the formation of acetone and alcs. This system occurs only in bacteria grown on poorly assimilable N substrates with a low amt. of proteolyzates, or on an egg-albumin substrate. T. Loanes

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



Growth substances of microbes. Their nature and significance for microorganisms. N. D. Iljinskaja. *Microbiology* (U. S. S. R.) 9, 740-78(1940).—A review. 220 references. T. Francs



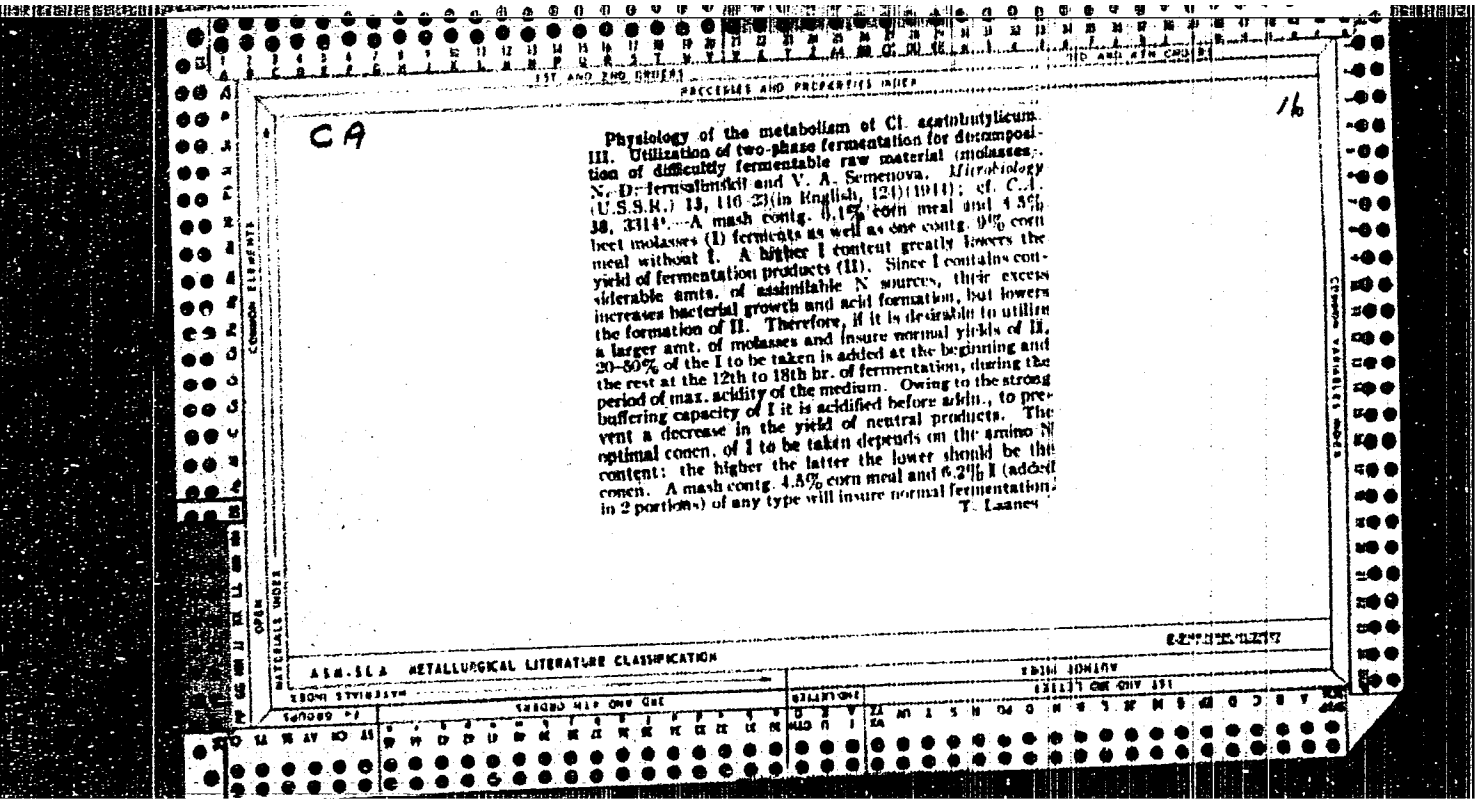
PROCESSES AND PROPERTIES INDEX

CA

The physiology of metabolism of Clostridium acetobutylicum. II. Influence of pH of the medium on bacteria. N. D. Ierusalimskiĭ. *Microbiology* [U. S. S. R.] 11, 244–57 (1942) (English summary); cf. *C. A.* 35, 4844, 4847°.—By using a method involving short fermentation periods, the pH of the medium remained nearly const. The optimal pH was between 5–5.1 and 6–6.2; min. 3.8–3.9, max. 7–7.2. Once development ceases because of unfavorable pH fermentation of sugar soon ceases. The formation of acetic and butyric acids is most rapid at pH 5–6, of acetone, butanol and ethanol at pH 4.2–5. Acidification of the substrate shifts the ratio of products of fermentation toward the solvent group. The increase of acetone production is greater than that of butanol production with lowered pH, though the ethanol is scarcely affected. In a young culture (4 hrs.) the yield of acetone is 10–15 times lower, and the yield of alcs. 4–6 times lower, than in a culture in the 2nd phase of fermentation (18–28 hrs.) at the same pH. The velocity of the fermentation as a whole is detd. by the ratio and velocity of the sep. biochem. processes. The optimal pH on the 4-hr. fermentation is 5.1–5.9; on the 18–19-hr., 4.6–5.2; on the 28-hr., 4.4–5.2. During the 1st stage of fermentation the acidity increases, during the 2nd phase the acidity shifts toward the optimal pH. 33 references.

H. Leverne Williams

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

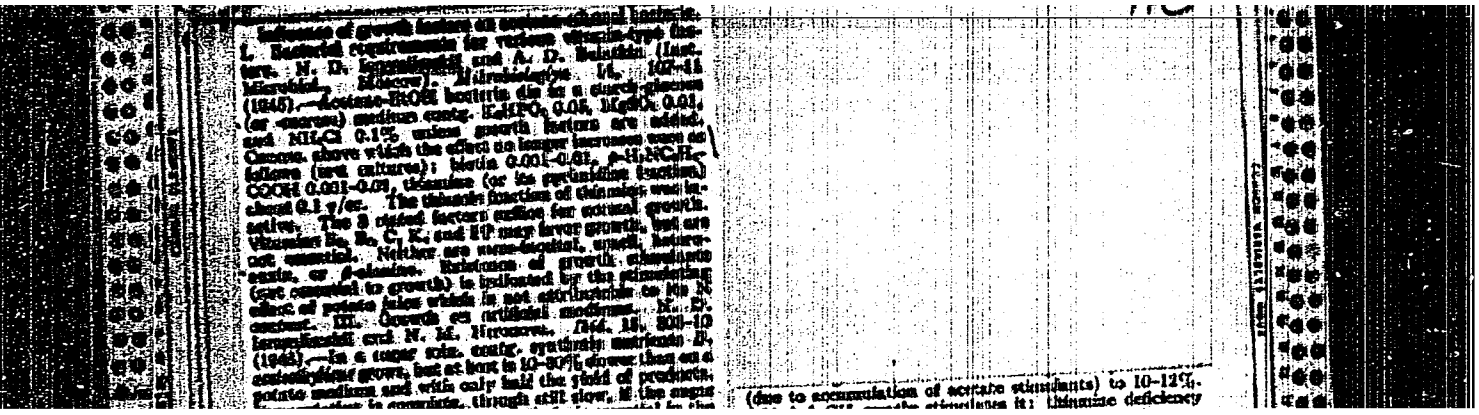


CA

16

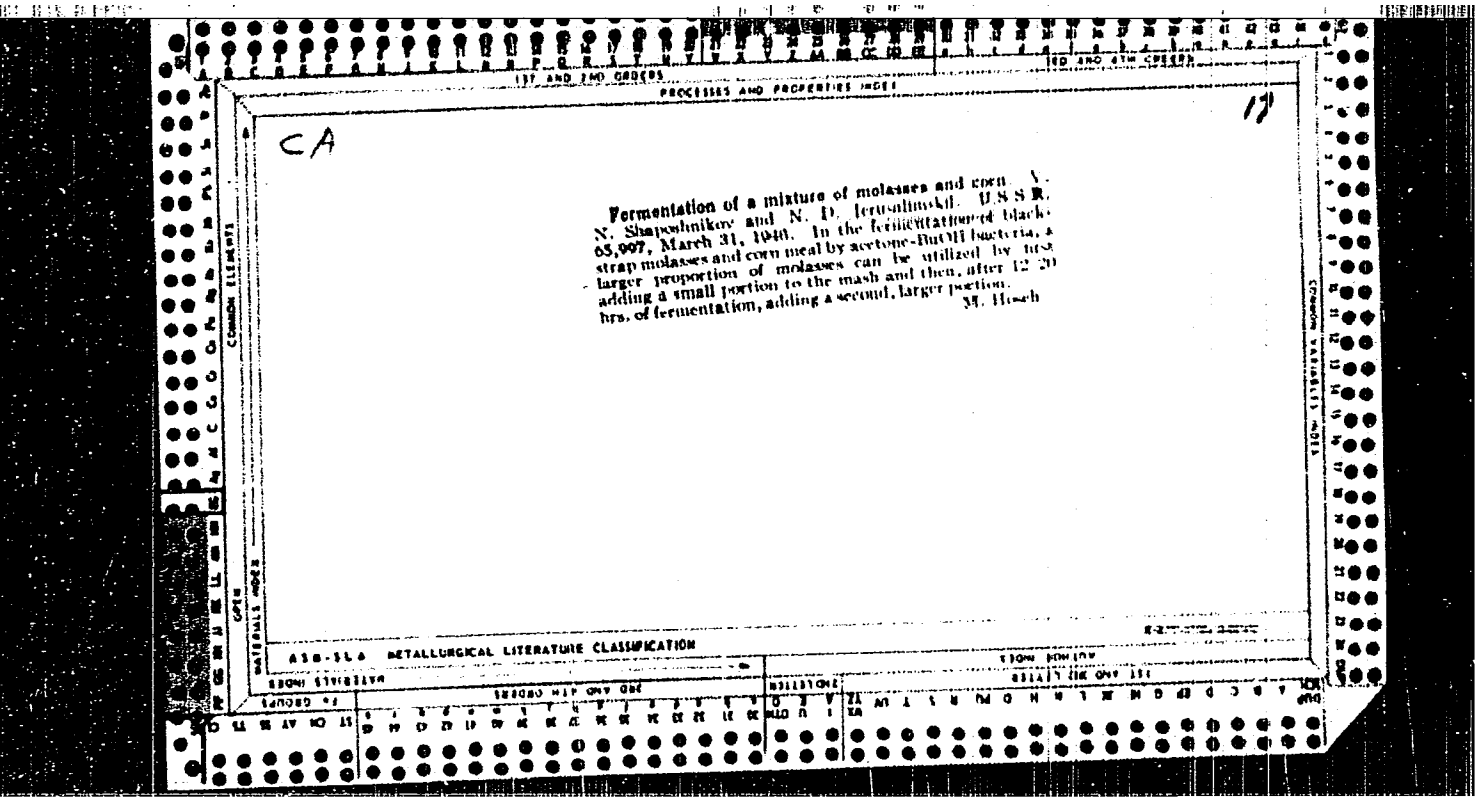
Physiology of the metabolism of Cl. acetobutylicum. III. Utilization of two-phase fermentation for decomposition of difficultly fermentable raw material (molasses). N. D. Iernsalimskii and V. A. Semenova. *Microbiology* (U.S.S.R.) 13, 116-23 (in English, 124) (1944); cf. *C.A.* 38, 3314⁹.—A mash contg. 0.1% corn meal and 4.8% beet molasses (I) ferments as well as one contg. 9% corn meal without I. A higher I content greatly lowers the yield of fermentation products (II). Since I contains considerable amts. of assimilable N sources, their excess increases bacterial growth and acid formation, but lowers the formation of II. Therefore, if it is desirable to utilize a larger amt. of molasses and insure normal yields of II, 20–50% of the I to be taken is added at the beginning and the rest at the 12th to 18th hr. of fermentation, during the period of max. acidity of the medium. Owing to the strong buffering capacity of I it is acidified before addn., to prevent a decrease in the yield of neutral products. The optimal concn. of I to be taken depends on the amino N content; the higher the latter the lower should be the concn. A mash contg. 4.5% corn meal and 6.2% I (added in 2 portions) of any type will insure normal fermentation.

T. Laanes



IYERUSALIMSKIY, M. D.

"Influence of Growth Substances on Acetone-Ethyl Bacteria, II. Relation of Bacteria to Biotine, Thiamine, and Paraaminobenzoic acid," Ibid, XIV, 6, 393-402, 1945



CA

17

Fermentation of a mixture of molasses and corn . . . V. N. Shaposhnikov and N. D. Jerusalimskii. U.S.S.R. 65,907, March 31, 1946. In the fermentation of black-strap molasses and corn meal by acetone-Butyl bacteria, a larger proportion of molasses can be utilized by first adding a small portion to the mash and then, after 12–20 hrs. of fermentation, adding a second, larger portion. M. Hasch

YERUSALIMSKIY, N. D.

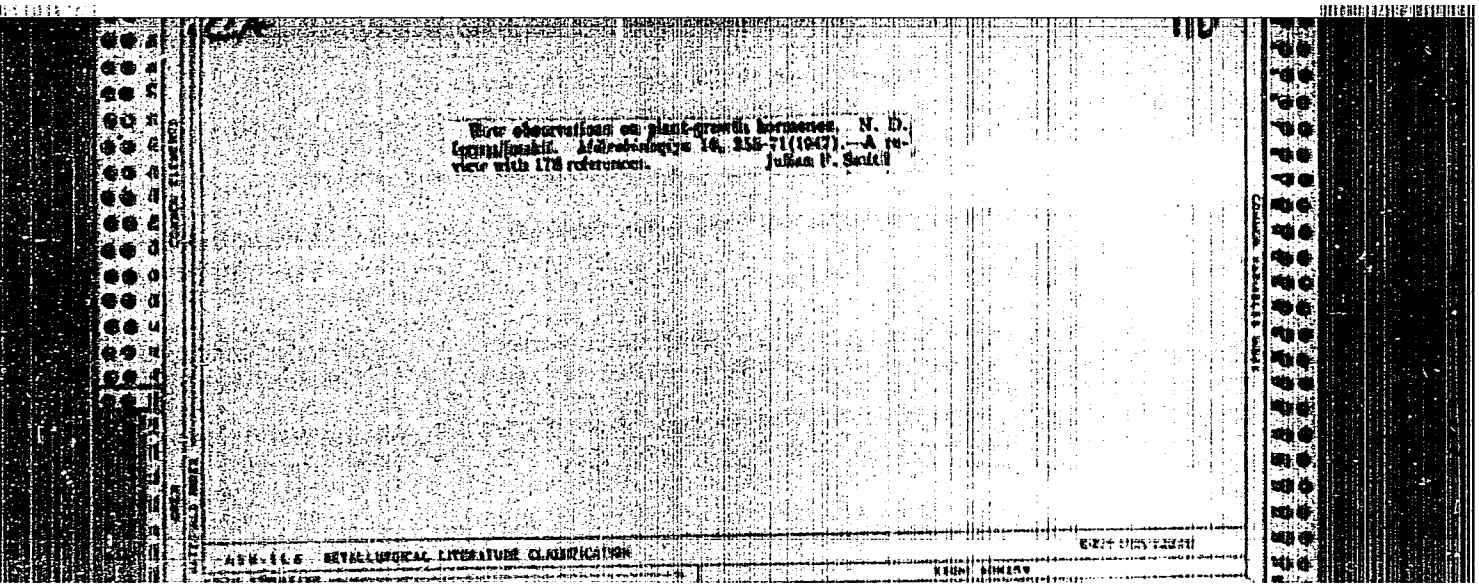
"About the Physiological Stages in the Development of Bacteria," Mikrobiologiia, vol. 15, 1946, pp. 405-416. 448.3 M582

So: SIRA Si 90-53, 15 Dec. 1953

IYENUSALIMSKIY, N. D.

"Physiology of Nutrition of Thermophile and Mesophile Butyric Acid Bacteria," in Reports of the Scientific-Research Work for 1945, Department of Biological Science, Publishing House of the Academy of Science, USSR, Moscow, 1947, p. 136, 511 Ak 144

So: SIRA Si 90-53, 15 Dec. 1953



New observations on plant-growth hormones. N. D. Iwanoffskaia. Mikrobiologiya 16, 258-71(1947). A review with 178 references. Julian P. Smith

YERUSALIMSKIY N. D.

Vitaminii kompleks sredy i razvitiye mikrobov (a survey) Mikrobiologiya 1947, 13/1 (33-45) Graphs 2 Tables 3

Vitamin complexes in bacterial culture media

4023 In a former survey of the literature on the chemical nature and biochemical action of substances which promote the growth of micro-organisms(Mikrobiologiya 1947, 16,3) the author pointed out that these substances in general belong to the vitamin B group, according to their chemical stnucture and physiological properties. They are used for the synthesis of co-enzymes and other important substances of the cells. In this article a survey is given of the literature on the connection between the vitamin-content of the medium and the growth of micro-organisms. Different aspects of the interaction of growth-promoting substances with certain enzymes are outlined and the author points out the possibilities of using the growth reaction of micro-organisms as a biological method for vitamin assays and outlines the scope for individual production of vitamins by the growth of certain micro-organisms. An extensive list of literature of 1940 to 1946 (171 numbers, mainly Anglo-American, with 15 Russian publications) is added.

Francke - The Hague (Sec. IV)

SO: Section II Vol. 1^2 No. 7-12

IERUSALIMSKIY, N. D. PA 16T14

USSR/Medicine - Bacteria - Growth Mar 1947
Medicine - Bacteria - Culture

"New Data on the Nature of Growth - substances (Auxo-actives) for Microorganisms," N. D. Ierusalimskiy, 16 pp

"Mikrobiologiya" Vol XVI, No 3

Review of the literature in the field for the period 1940 - 1945, with a seven-page bibliography, mostly of English language articles.

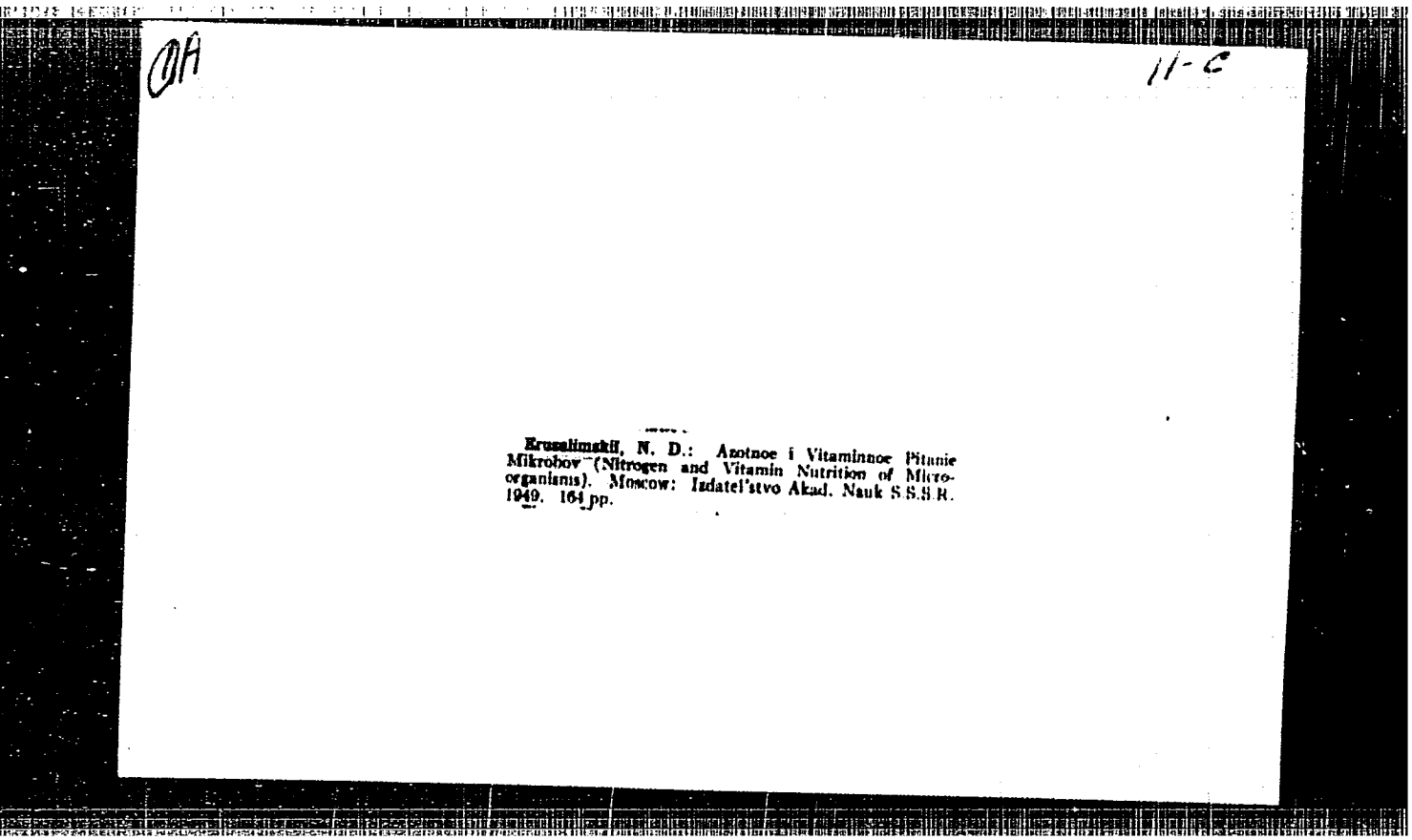
16T14

YERUSALIMSKIY N. D. Vitaminii kompieks sredy i razvitye mikrobov Vitamin complexes in bacterial culture media (a survey) Mikrobiologiya, Moscow 1947, 16/4 (336-350)

In a former survey of the literature on the chemical nature and biochemical action of substances which promote the growth of micro-organisms (Microbiologiya 1947, 16/3) the author pointed out that these substances in general belong to the vitamin-B group, according to their chemical structure and physiological properties. They are used for the synthesis of co-enzymes and other important substances of the cells. In this article a survey is given of the literature on the connection between the vitamin-content of the medium and the growth of micro-organisms. Different aspects of the interaction of growth-promoting substances with certain enzymes are outlined and the author points out the possibilities of using the growth reaction of micro-organisms as a biological method for vitamin assays and outlines the scope for individual production of vitamins by the growth of certain micro-organisms. An extensive list of literature of 1940 to 1946 (171 numbers, mainly of Anglo-American origin, with 15 Russian publications) is added. Francke-The Hague

So: Medical Microbiology and Hygiene, Section IV, Vol. I, #1-6

"Growth Substances of Bacteria, Their Nature and Significance in the Life of Microorganisms, Ibid, 9, 7-8, 740-778, 1948



QA

11-C

Krasil'nikov, N. D.: Azotnoe i Vitaminnoe Pitanie Mikrobov (Nitrogen and Vitamin Nutrition of Microorganisms). Moscow: Izdatel'stvo Akad. Nauk S.S.S.R. 1949. 164 pp.

IYERUSALIMSKIY, N.D.

"Nitrogenous and Vitamin Nutrition of Microbes" N.D. Iyerusalimskiy, edited by A.A. Imshenetskiy, Academy of Sciences USSR, Moscow/Leningrad,1949(New Chemical Books Published in the USSR)

SO: Uspekhi Khimii, Vol. XVIII, No.6,1949;Vol. XIX, No.1,1950
W-10083

"Apropos of G. M. Bpsh'yan's Book 'On the Nature of Viruses and Microbes"

Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1950, pp 76-79
W-24635

USSR/Medicine, Biology - Microbiology Oct 51

"Problem of the Ontogenesis of Bacteria and Ways of Solving It," I. D. Yerusalimskiy, Inst of Microbiol, Acad Sci USSR

"Trudy Inst Mikrobiol" No 1, pp 5-43

Discusses status of the problem of the cycle of development of bacteria, the concept of ontogenesis in general biology, methods of studying the ontogenesis of bacteria, and examples of ontogenetic analysis. States that representatives of outlived schools either err by refusing to consider within the life cycle of bacteria modifications which form

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USSR/Medicine, Biology - Microbiology (Contd) Oct 51

under the influence of the environment, or by including them in the life cycle, but assuming that the environment, acting as a nonspecific irritant, only releases innate possibilities. Many bacteria are adapted to several sets of conditions. They develop specific properties and characteristics under definite conditions which can be established by an ontogenetic analysis corresponding to T. D. Lysenko's "stage analysis."

209T80

YERUSALIMSKIY, I. D.

-, N.D. (Yerusalimskiy)

Professor N. D. Yerusalimskiy - Institute of Microbiology, Academy of Sciences USSR, presented a paper devoted to the preservation of useful properties of microorganisms, once these properties had been developed. (ALL-UNION CONFERENCE OF THE DIRECTED MODIFICATION AND SELECTION OF MICROORGANISMS, Moscow, November 1951,

SO: Priroda, No.2, 1951
W-22960

c. a.
1951

Biological Chemistry
11 Microbiology

Ontogenetic development of cultures of butyric acid bacteria. N. D. Ierusalimskii (Microbiol. Inst., Acad. Sci., Moscow). *Mikrobiologiya* 20, 203–16(1951).—Butyric acid bacteria pass through 4 life stages (embryo, growth, maturity, age). Maturity is reached early and held long. Deficiencies in vitamins or amino acids impede growth and all other aspects of development. Excess of sol. org. N compds. in the medium favors formation (apparently from reserve proteins) of cellular inclusions with a high refractive index.

Julian P. Smith

CA

11 C

The significance of trace elements to acetone ethanol bacteria. N. D. Iritushkin. *Doklady Akad. Nauk S.S.S.R.* 76, 913-15(1951). —Addn. of the following trace elements to the nutrient medium of the bacteria: B (as $Na_2B_4O_7.10H_2O$ 1.2 mg./l.), Mn ($MnSO_4.4H_2O$ 10.0), Mo (as Na_2MoO_4 0.2), Cu (as $CuSO_4.5H_2O$ 0.1), Fe (as $FeSO_4.7H_2O$ 10.0), I (as KI 0.1), and NaCl (50.0), gave a better development than the nutrient mixt. alone or with addns. of thiamine and *p*-aminobenzoic acid. However, addn. of potato juice gave even better results; ashed potato juice had a somewhat weaker activity than fresh juice. Further study with doubly distd. H_2O showed that only 3 trace elements are necessary: Mn, Fe, and Mo, the latter being most effective.

G. M. K.

1951

IYERUSALIMSKIY, N.D. (Yerusalimskiy)

"Soviet Microbiology, A Science of Peace" by YERUSALIMSKIY, N. (Prof)
SO: Literaturnaya Gaseta, 5 Apr 1952

IERUSALIMSKIY, N.D.; NERONOVA, N.M.; YARYGINA, N.P.

Effect of the conditions of the medium on physiological requirements of butyric acid bacteria. Trudy Inst. Mikrobiol., Akad. Nauk S.S.S.R. No2, 107-13 '52. (MLRA 5:12)
(CA 47 no.15:7591 '53)

1. Moscow State Univ.

IERUSALIMSKIY, N.D.; ANISIMOVA, S.A.; EROKHINA, L.I.

Full-valued synthetic medium for acetone-ethanol bacteria. Trudy Inst. Mikrobiol., Akad. Nauk S.S.S.R. No.2, 114-20 '52. (MLRA 5:12) (CA 47 no.15:7591 '53)

1. Moscow State Univ.

CA

11C

Role of thiamine in acetone formation by smooth and laciniate strains of Bacillus acetoethylicus. N. D. Ienu-Salimskii and L. M. Lur'e (Lomonosov State Univ., Moscow). *Mikrobiologiya* 21, 153-9(1952).—Chumak's smooth strain of *B. acetoethylicus* (C.A. 42, 3450d) is a more active acetone former than his laciniate strain, the acetone yield of which is strongly influenced by thiamine concn. whereas that of the smooth strain is not. With both strains the influence of thiamine on EtOH formation is slight. In a mash contg. sugar (10 g./l.) the laciniate strain gave acetone yields of 0.82, 1.32, and 1.47 g./l. at thiamine concns. of 0.001, 0.1, and 10 mg./l., resp. Julian F. Smith

[redacted], . . L.

Microorganisms

Controlled variability and selection of microorganisms.
Vest. AN SSSR, 22, No. 1, 1952

9. Monthly List of Russian Accessions, Library of Congress, June 1952 Uncl.

USSR/Medicine, Biology - Microbiology Jan/Feb 52

"Directed Modification of Microorganisms (Results of the All-Union Conference at the Institute of Microbiology, Academy of Sciences USSR, November 1951," N. D. Yerusalimskiy

"Uspekh Sovrem Biol" Vol XXXIII, No 1, pp 148-152

/Presents largely information already given by A. Imshenetskiy," Med Rabotnik" Vol XV, No 2, 6 Jan 1952, and A. S. Krivisskiy, "Priroda" Vol XL, No 2, Feb 1952, pp 66-73, but discusses contents of papers read at the meeting from a somewhat different viewpoint./ Says that a number of participants (Kvasnikov, Kir'yalova, and others) reported upon

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USSR/Medicine, Biology - Microbiology Jan/Feb 52
(Contd)

effects of symbiotic and antagonistic influences on the modifiability of nonpathogenic bacteria and yeasts; that S. N. Muromtsev, Berilava, Kaden, Rotmistrov, Fisher, and others presented papers on the transformation of bacteria into noncellular forms; that it has been decided to call meetings in order to discuss microbiol problems of species and species formation as well as of noncellular form of life.

207T69

IYERUSALIMSKIY, N. D.

USSR/Biology - Microbiology

Card 1/1 : Pub. 124 - 17/24

Authors : Ierusalimskiy, N. D., Dr. of Biol. Sc.

Title : Technical microbiology in Czechoslovakia

Periodical : Vest. AN SSSR 11, 84-87, November 1954

Abstract : Progress report issued by the Institute of Biology of the Czechoslovakian Academy of Sciences on its work and achievements in the field of technical microbiology is presented.

Institution : .....

Submitted : .....

MISHUSTIN, Ye.N.; IERUSALIMSKIY, N.D.

Sixth International Congress of Microbiologists in Rome.
Mikrobiologiia 23 no.1:125-128 Ja-F '54. (MLRA 7:2)
(Microbiology--Congresses)

YERUSALIMSKIY, N. D.

An Answer to G. P. Kalina's Article "Embryogenesis and Ontogenesis of Microbes," Mikrobiologiya, Vol XXIII, No 2, 1954, pp 190-194.

Inst. of Microbiology, AS USSR

Translation M-601, 5 Jul 55

IYERUSALIMSKIY, N.D.; MISHUSTIN, Ye.N.

Results of the Rome Congress of Microbiologists. Usp.sovr.biol. 37 no.1:127-132 Ja-F '54. (MLRA 7:2)
(Rome--Microbiology--Congresses) (Congresses--Microbiology--Rome)

IYERUSALIMSKIY, N.D.

USSR/ Scientific Organization - Conferences

Card 1/1 : Pub. 86 - 8/40

Authors : Mishustin, E. N., and Iyerusalimskiy, N. D.

Title : At the International Congress of Microbiologists in Rome

Periodical : Priroda 43/4, 64-68, Apr 1954

Abstract : An account is given mainly of the sight-seeing and social features of the biological congress in Rome. It is noted, however, from papers read that outside of the Soviet Union the action of antibiotic substances is studied mainly from the viewpoint of curing diseases, overlooking their application in the industrial preservation of food.

Institution : .....

Submitted : .....

USSR/Microbiology - General Microbiology. F-1

Abs Jour : Ref Zhur - Biol., No 4, 1958, 14619

Author : Ierusalimskiy, N.D., Rukina, E.A.
Inst :
Title : Study of Spore Formation Conditions of Butyric Acid Bacteria with Aid of Colloidal Wrappers.

Orig Pub : Mikrobiologiya, 1956, 25, No 6, 649-658

Abstract : Cultivation of Clostridium saccharobutiricum in colloidal wrappers immersed in a definite medium made it possible to trace the dependence of different spore formation stages on changes in the medium. The accumulation of a large number of vegetative cells up to 3.5-7 billions was best on a rich nutrient medium with a yeast autolysate and peptone. To convert the vegetative cells into ripe pre-spore granulose-containing and clostridial forms, a favorable influence was exerted by transferring the cultures into a nitrogen-free medium with glucose and

Card 1/2

INST. MICROBIOLOGY, AS USSR

Card 2/2

IYERUSALIMSKIY, N.D.; KOSIKOV, K.V.

Foreign research on adaptability of micro-organisms. Mikrobiologiia 26 no.5:614-619 S-O '57. (MIRA 10:12)
(LONDON--MICROBIOLOGY--CONGRESSES)
(ADAPTATION (BIOLOGY)

AUTHOR IYERUSALIMSKIY, N.D., Doctor of biological sciences 30-7-11/36

TITLE On the Symposium of the Adaptation of Microorganisms to Pharmaceutical Preparations in England
(Simposium po adaptatsii mikroorganizmov k lekarstvennym veshchestvam v Anglii. Russian)

PERIODICAL Vestnik Akademii Nauk SSSR, 1957, Vol 27, Nr 7, pp 58 - 61 (U.S.S.R.)

ABSTRACT At the suggestion of the Society for Promotion of International Cooperation in the Field of Medical and Chemical Research the above-mentioned meeting took place in London from March 26 to 29. Representatives of the U.S.S.R. (from the Moscow Institute of Genetics) also participated in it. Already for years industrious scientific investigations were carried out on the biochemical and biological mechanism of adaptation of microorganisms to various conditions of existence. Their adaptability is extraordinary and varied. It was not until recently , however, that this adaptability was perceived to its full extent. Very many problems in this field are still to be solved. For this reason representatives of various research institutes also participated in the London meeting. In the 17 papers read and in the subsequent discussion two groups of research could be distinguished: The one made it its objective to investigate the causes of the power of resistance of the microbe cultures

Card 1/2

LOGOTKIN, Ivan Sergeyevich, kand. tekhn. nauk; IYENUSALIMSKIY, N.D., prof., doktor biol. nauk, retsenzent; MALINKIN, S.G., inzh., retsenzent; MAICHENKO, A.L., prof., doktor tekhn. nauk, spetsred.; MASLOVA, S.F., red.; CHEBYSHEVA, Ye.A., tekhn. red.

[Technology of the manufacture of acetone and butyl alcohol] Tekhnologiia atsetono-butilovogo proizvodstva. Moskva, Pishchepromizdat, 1958. 266 p. (MIRA 11:10)
(Acetone) (Butyl alcohol)

YERUSALIMSKIY, Nikolay A.
Institute of Microbiology, Academy of Sciences, USSR.

"The Needs for Cultivation of Bacteria Under Different Physiological Conditions."

paper presented at Seventh International Congress of Microbiology, Stockholm, Sweden, 4 - 9 Aug 1958.

YERUSALIMSKIY, N. D..

"The Conditions of Growth of Microorganisms; Some Theoretical Aspects,"

"A Study of the Process of Development of Microorganisms by thed Continous Flow and Exchange of Media Method,"

report submitted for the Symposium on Continous Cultivation of Microorganisms, Czech. Acad. of Sci., Prague CSR, 23-28 June 1958.

YERUSALIMSKIY, N. D.

"Growth and Development of Bacteria on Current Media."

report submitted for the International Congress for Microbiology, Stockholm, Sweden, 4-9 Aug 1958.

YERUSALIMSKIY N. D.

USSR / Microbiology. General Microbiology. Geological Activity. F

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 24020

Author : Kosikov, K. V.; Iyerusalimskiy, N. D.
Inst : Academy of Sciences USSR
Title : Symposium on the Mechanism of Development of Toxistability in Microorganisms in London

Orig Pub : Izv. AN SSSR, Ser. biol., 1958, No 1, 118-120

Abstract : No abstract given

Card 1/1

IYERUSALIMSKIY, N.D.

Principles underlying the control of vital activities of micro-organisms used in industry. Trudy Inst.mikrobiol. no.5:63-79 '58 (MIRA 11:6)

1. Institut mikrobiologii AN SSSR.
(MICRO-ORGANISMS--INDUSTRIAL APPLICATIONS)

17(2)

AUTHOR: Iyerusalimskiy, N. D., Doctor of Biological Sciences SOV/30-58-11-14/48

TITLE: Symposium on the Continuous Cultivation of Micro-Organisms (Simpozium po nepreryvnomu kul'tivirovaniyu mikroorganizmov)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 11, pp 73 - 74 (USSR)

ABSTRACT: The symposium was organized by the Chekhoslovatskaya Akademiya nauk (Czechoslovak Academy of Sciences) and held in Prague from June 23 to 28. 119 Czechoslovak and 30 foreign scientists participated in the meetings. The Soviet delegation consisted of N.D.Iyerusalimskiy, Ye. A. Plevako, M. Ya.Kalyuzhnyy, K.P. Andreyev, and N.S.Ternovskiy. I.Malek (Czechoslovakia), D. Gerbert, Ye.Pauel (both UK), A.Novik (USA), and N.D.Iyerusalimskiy (USSR) reported on general theoretical conditions for the cultivation of micro-organisms in flowing cultures. T.Kholme (Sweden), K.R.Batlin (UK), K.Beran, I.Kushka, I.Dir, Z.Frenzl, and M.Burger (all of Czechoslovakia), K.P.Andreyev,

Card 1/2

Symposium on the Continuous Cultivation of Micro-Organisms SOV/30-58-11-14/48

M.Ya.Kalyuzhnyy, Ye.A.Plevako, O.A.Bakushinskaya, N.A.Semikhatova (all of USSR) and others reported on the results obtained by the use of flowing cultures for solving some practical problems. Ya.Rzhichitsa (Czechoslovakia) reported on the technique of continuous cultivation of microbes under laboratory and practical conditions. At present, this method is being introduced in the commercial production of a series of micro-organisms which are used for different processes (production of alcohol, bread, yeast etc.)

Card 2/2

Yerusalimskiy N.D.

KOSIKOV, K.V.; YERUSALIMSKIY, N.D.

Symposium on the development of resistance to posisonous substances in micro-organisms, held in London. Izv. AN SSSR Ser.biol. 23 no.1: 118-120 Ja-F '58. (MIRA 11:1)
(LONDON--BACTERIOLOGY--CONGRESSES)
(ADAPTATION (BIOLOGY))

IYERUSALIMSKIY, N.D., IMSHENETSKIY, A.A., KOSIKOV, K.V., KRASIL'NIKOV, N.A. RAUTENSHTEYN, Ya.I.

Matus Osharovich Streshinskii; an obituary. Mikrobiologiia 27 no.2:271 Mr-Ap '58 (MIRA 11:5)
(STRESHINSKII, MATUS OSHAROVICH, 1912-1957)

47(2)

AUTHOR: Alferov, V. V. SOV/30-59-2-48/60

TITLE: Continuous Fermentation and Breeding of Microorganisms (Nepreryvnoye brozheniye i vyrashchivaniye mikroorganizmov)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 2, pp 106-108 (USSR)

ABSTRACT: The Institut mikrobiologii Akademii nauk SSSR (Microbiological Institute of the Academy of Sciences, USSR) convened a conference from October 13 to 15, 1958 which dealt with the investigation of some working results in this field as well as with the discussion of a further intensification of the productions basing on the activity of microorganisms. The conference was attended by more than 200 representatives of academic and scientific branch research institutes, enterprises, sovnarkhozes, universities, as well as foreign scientists. The following lectures were heard:

N. D. Iyerusalimskiy spoke of the theoretical foundation of the method of continuous microbe breeding and its prospects of application in the microbiological industry.

Ye. A. Plevako, Vsesoyuznyy nauchno-issledovatel'skiy institut khlebopekarnoy promyshlennosti (All-Union Scientific Research

Card 1/4

Institute of Bread-Production Industry) dealt with the problem of the breeding of yeast in solutions containing molasses. P. N. Fisher, K. P. Andreyev, V. A. Utenkova, M. Ya. Kalyuzhnyy and A. P. Kryuchkova, Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti (All-Union Scientific Research Institute for the Industry of Hydrolysis and Sulfite Spirits) evaluated the theoretical and practical work in the field of continuous fermentation of wood hydrolyzates and sulfite liquor as well as their utilization for obtaining fodder yeast.

V. I. Morozova, Krasnoyarskiy gidroliznyy zavod (Krasnoyarsk Hydrolysis Plant) said that the introduction and completion of the continuous process of yeast breeding made it possible to increase the output of yeast factories by ten times.

V. L. Yarovenko, A. L. Malchenko, Vsesoyuznyy nauchno-issledovatel'skiy institut spirtovoy i likero-vodochnoy promyshlennosti (All-Union Scientific Research Institute of the Spirit, Liqueur and Brandy Industry), V. M. Nakhmanovich, Dokshuninskaya nauchno-issledovatel'skaya laboratoriya (Dokshuninskaya Scientific Research Laboratory) reported on the experiment of applying the method of continuous fermentation

of the starchy raw material and syrup in the alcohol and acetone-butanol industry.
S. A. Konovalov, All-Union Scientific Research Institute of the Alcohol, Liqueur and Brandy Industry reported on the problem of antiseptics in fighting infection due to ferments.
L. Yu. Medvinskaya, Institut mikrobiologii Akademii nauk USSR (Microbiological Institute of the AS UkrSSR) reported on the investigation of the morphological and physiological properties of yeast.
A. D. Kovalenko, Andrushevskiy spirtovoy zavod (Andrushevka Distillery), N. Ya. Savchenko, Malo-Viskovskiy spirtovoy zavod (Malo-Viskovskiy Alcohol-Distillery), S.P. Makarova, Smolenskiy Sovnarkhoz (Smolensk Sovnarkhoz) reported on some working results obtained by distilleries in the syrup fermentation by using the method of continuous flow.
M. S. Loytsyanskaya, Leningradskiy universitet (Leningrad University) characterized the correlation of reproduction processes and biochemical activity of acetic acid bacteria in the high-speed production of vinegar.
N. M. Neronova, Microbiological Institute of the AS USSR spoke of the possibility of obtaining vitamin B_{12} by

IYERUSALIMSKIY, N.D.

Features of the growth and development of micro-organisms. Trudy Inst. mikrobiol. no. 6:20-37 '59. (MIRA 13:10)

1. Institut mikrobiologii AN SSSR.
(BACTERIA)

IYERUSALIMSKIY, N.D.

Theory and practice of the continuous cultivation of micro-organisms; material from the symposium in Prague. Mikrobiologiia 28 no.1:152-155 Ja-F '59. (MIRA 12:3)

(BACTERIOLOGY--CULTURE AND CULTURE MEDIA)

IYERUSALIMSKIY, N.D.; KONOVA, I.V.; NERONOVA, N.M.

Determining vitamins and antibiotics by diffusion into agar. Report No. 1: Simplified computations for the dish method. Mikrobiologiia 28 no.3:433-443 My-Je '59. (MIRA 13:3)

1. Institut mikrobiologii AN SSSR.
(VITAMINS, determ.
simplified computations for cup method (Rus))
(ANTIBIOTICS, determ.
same)

KONOVA, I.V.; NERONOVA, N.M.; IYERUSALIMSKIY, N.D.; BORISOVA, A.I.

Determining vitamins and antibiotics by diffusion into agar. Report No.2: Quantitative determination of vitamin B_{12} and its derivatives by paper chromatography. Mikrobiologiia 28 no.4:490-494 Jl-Ag '59. (MIRA 12:12)

1. Institut mikrobiologii AN SSSR.
(VITAMIN B_{12} chem.)
(ESCHERICHIA COLI)

NERONOV, N.M.; IYERUSALIMSKIY, N.D.

Continuous cultivation of Propionibacterium producing vitamin B_{12}.
Mikrobiologiia 28 no.5:647-654 S-O '59. (MIRA 13:2)

1. Institut mikrobiologii AN SSSR.
(PROPIONIBACTERIUM culture)
(VITAMIN B_{12} metab.)

IYERUSALIMSKIY, N.D.; RUKINA, Ye.A.

Studying the conditions promoting sporulation in bacteria by the method of continuous flow microcultures. Mikrobiologiia 28 no.6: 801-806 N-D '59. (MIRA 13:4)

1. Institut mikrobiologii AN SSSR.
(BACTERIA, culture)

IYERUSALIMSKIY, N.D.

."Methods of Continuous Flow Cultures as Used in Various Production Processes."

presented at the 1st Intl Fermentation Symposium, Rome, Italy, 9-14 May 60.

Microbiological Institute, USSR Acad. of Sci.

IYERUSALIMSKIY, N.D., prof., red.; KOVALEVSKAYA, A.I., red.; SOKOLOVA, I.A., tekhn.red.

[Continuous fermentation and raising of micro-organisms; materials of the conference held by the Institute of Microbiology of the Academy of Sciences of the U.S.S.R.] Nepreryvnoe brozhenie i vyrashchivanie mikroorganizmov; materialy soveshchaniia, provedennogo Institutom mikrobiologii AN SSSR. Pod red. N.D.Ierusalimskogo. Moskva, Pishchepromizdat, 1960. 127 p.
(MIRA 14:1)

1. Soveshchaniye po nepreryvnomu brozheniyu i vyrashchivaniyu mikroorganizmov. 1958.
(Industrial microbiology--Congresses)

IYERUSALIMSKIY, N.D.; YEGOROVA, L.A.

Relation of Bacillus megatherium to the conditions of the culture medium in the course of its life cycle. Mikrobiologiia 29 no.3: 323-328 My-Je '60. (MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(BACILLUS MEGATHERIUM)
(BACTERIOLOGY—CULTURES AND CULTURE MEDIA)

IYERUSALIMSKIY, M.D.

First International Symposium on Fermentation. Vest.AN SSSR
30 no.11: N '60. (MIRA 13:11)

1. Chlen-korrespondent AN SSSR.
(Fermentation)

IYERUSALIMSKIY, N.D.; KONOVA, I.V.; NERONOVA, N.M.; ANCHUROVA, A.I.

Determination of vitamin B_{12} by the bioautographic method. Vit. res. i ikh isp. no.5:119-132 '61. (MIRA 15:1)

1. Institut mikrobiologii AN SSSR, Moskva.
(CYANOCOBALAMINE) (BIOLOGICAL ASSAY)

KONOVA, I.V.; FATEYEVA, M.V.; IYERUSALIMSKIY, N.D.

First International Symposium in Italy. Mikrobiologiia 30 no.2: 371-374 Mr-Ap '61. (MIRA 14:6)
(FERMENTATION—CONGRESSES)

IYERUSALIMSKIY, N. D.

"Physiology and biochemistry of microbes" by Jiri Starka. Reviewed by N. D. Ierusalimskii. Mikrobiologiia 30 no.3:566-567 My-Je '61. (MIRA 15:7)

(MICROBIOLOGY) (BIOCHEMISTRY) (STARKA, JIRI)

IYERUSALIMSKIY, N.D.

Theory and practice of the continuous cultivation of micro-organisms.
Mikrobiologiia 30 no.5:818-824 S-O '61. (MIRA 14:12)

1. Institut mikrobiologii AN SSSR.
(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)

IYERUSALIMSKIY, N.D., GRISHANKOVA, YE.A., SHEVCHENKO, L.F.

Effect of streptomycin on metabolism in microbes.
Report submitted to the Intl. congress for Microbiology

Montreal, Canada 19-25 Aug 1962

IYERUSALIMSKIY, N.D.; SHAFOROSTOVA, L.D.

Changes in the biosynthesis of vitamin B_{12} and p-aminobenzoic acid in Bacillus megaterium due to the effect of adaptation to norsulfazole. Dokl. AN SSSR 142 no.5:1176-1179 F '62.
(MIRA 15:2)

1. Chlen-korrespondent AN SSSR (for Iyerusalimskiy).
(SULFATHIAZOLE)
(BENZOIC ACID)
(CYANOCOBALAMINE)
(BACILLUS MEGATERIUM)

IYERUSALIMSKIY, N.D.

Use of the continuous culture method in physiological investigation of the cells of microbes and other organisms. Izv. AN SSSR. Ser. biol. no.3:418-429 My-Je '62. (MIRA 15:6)

1. Institute of Microbiology, Academy of Sciences of the U.S.S.R., Moscow.
(BACTERIOLOGY—CULTURES AND CULTURE MEDIA)
(TISSUE CULTURE)

IYERUSALIMSKIY, N.D.; ZAYTSEVA, G.N.; KHMEL', I.A.

Studying the physiology of Azotobacter vinelandii under conditions of a continuous flow culture. Mikrobiologiia 31 no.3:417-423 My-Je '62. (MIRA 15:12)

1. Institut mikrobiologii AN SSSR i Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni Lomonosova.

(AZOTOBACTER)

IYERUSALIMSKIY, N.D.; GRISHANKOVA, Ye.V.; SHEVCHENKO, L.A.

Change in the physiological requirements of Bacillus idosus under the action of streptomycin. Mikrobiologiia 31 no.6:995-1001 N-D '62. (MIRA 16:3)

1. Institut mikrobiologii AN SSSR.
(STREPTOMYCIN) (BACTERIA, SPOREFORMING)

IYERUSALIMSKIY, N.D.

Method of continuous flow cultures and its significance for the analysis of cellular functions. Vest. AN SSSR 32 no.3:40-45 Mr '62. (MIRA 15:2)

1. Chlen-korrespondent AN SSSR.
(Tissue culture)
(Bacteriology--Cultures and culture media)

IYERUSALIMSKIY, N.D.; RUBAN, Ye.L., red.; AVDUSINA, Ye.I., red. izd-va; KISELEVA, A.A., tekhn. red.; POLYAKOVA, T.V., tekhn. red.

[Principles of the physiology of microbes]Osnovy fiziologii mikrobov. Moskva, Izd-vo AN SSSR, 1963. 145 p. (MIRA 17:1)

IYERUSALIMSKIY, N.D.; SHEVCHENKO, L.A.; GRISHANKOVA, Ye.V.

Change in some physiological requirements of yeasts as a result of adaptation to streptomycin. Mikrobiologiia 32 no.1: 13-16 '63 (MIRA 17:3)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni Lomonosova.

IYERUSALIMSKIY, N. D.

"Factors determining the steady-state in continuous culture of micro-organisms."

report submitted for 2nd Intl Fermentation Symp, London, 13-17 Apr 64.

L 23540-66 EWP(j)/EWT(m)/T RM/DJ/WE

ACC NR: AP6013987 SOURCE CODE: UR/0216/65/000/001/0053/0057

AUTHOR: Iyerusalimskiy, N. D.--Lerusalimsky, N. D.; Skryabin, G. K. 46

ORG: Institute of Biochemistry and Physiology of Microorganisms, AN SSSR (Institut biokhimii i fiziologii mikroorganizmov AN SSSR) B

TITLE: Problems of the microbiology of hydrocarbons

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 1, 1965, 53-57

TOPIC TAGS: hydrocarbon, fungus, yeast, bacteria, oxidation, cytology, plant chemistry

ABSTRACT: The problem of research in the microbiology of hydrocarbons can be subdivided into four categories: 1) relation between taxonomic standing of microorganisms and their ability to assimilate hydrocarbons; 2) ecological and adaptive-physiological premises for this ability; 3) enzymology and chemistry of the oxidation of hydrocarbons; 4) cytological and cytochemical premises for this process. The authors describe the results of a corresponding four-stage investigation. During the first stage, approximately 2,000 cultures of fungi, yeasts, bacteria, and actinomycetes were grown on media containing liquid paraffins of the normal series and it was found that the ability to assimilate hydrocarbons is in fairly good agreement with taxonomic position. During the second stage of the investigation, some 1,000 cultures of microorganisms were collected from appropriate natural habitats

Card 1/2 UDC: 576.8: 547.912

L 23540-66

ACC NR: AP6013987

(sludge of petrochemical enterprises, petroleum-impregnated soil) and their taxonomic positions were found to agree with the first stage of investigations. By means of continuous culturing on media with increasing concentrations of phenol, cultures of microorganisms capable of withstanding phenol concentrations of as much as 1,000 mg/liter of medium have been obtained. During the third stage of oxidizing activity of microorganisms was investigated, confirming the previous findings that paraffins of the normal series oxidize more readily than iso-compounds. Much remains to be clarified regarding the cytology and cytochemistry of the oxidation of hydrocarbons, particularly with respect to the chemical composition of the products of the primary processing of hydrocarbons and their localization in cell structures, as well as the localization of the enzymes responsible for the oxidation of hydrocarbons. [JPRS]

SUB CODE: 06 / SUBM DATE: 25Sep64 / ORIG REF: 005 / OTH REF: 011

Card 2/2

L 36092-66 EWT(m)/T WE

ACC NR: AP6015206 (A) SOURCE CODE: UR/0411/65/001/002/0163/0166

AUTHORS: Iyerusalimskiy, N. D.; Andreyeva, Ye. A.; Grishankova, Ye. L.; Golovlev, Ye. L.; Dorokhov, V. V.; Zhukova, L. N.

53
B

ORG: Institute of Microbiology, Academy of Sciences, SSSR, Moscow (Institut mikrobiologii Akademii nauk SSSR)

TITLE: A study of the microflora of sewage of petroleum refineries

SOURCE: Prikladnaya biokhimiya i mikrobiologiya, v. 1, no. 2, 1965, 163-166

TOPIC TAGS: bacteria, fuel microorganism, industrial waste, petroleum refining, yeast, aromatic hydrocarbon, diesel fuel, kerosene

ABSTRACT: The results of a study of active slime from petroleum refineries are given. Active slimes from waste phenolic water and from oil traps (purified of petroleum by six-fold extraction by benzene) were studied. Recent and old slimes from oil refinery No. 4 and a sample of slime from the trap of No. 4 were also studied. The specimens were kept in the active state in Sëngen's medium at pH 7. From the slimes, 575 cultures were extracted, and 145 other cultures were extracted from similar sources. The mycobacteria were 44%, the bacteria 28%, and yeast 26%. All the bacteria were gram-negative nonspore-forming. They were represented mostly by Pseudomonas and Achromobacter. The yeasts were Candida and Torulopis. All of the extracted microorganisms grew well in pure kerosene, pure paraffin, diesel-fuel distillate, and

Card 1/2 UDC: 622.35+613.663

LS

IYERUSALIMSKIY, N.D.; ANDREYEVA, Ye.A.; LIROVA, S.A.; YERMAKOVA, I.T.

Hydrocarbon oxidation by yeast. Prikl. biokhim. i mikrobiol. 1 no. 6:601-605 N-D '65. (MIRA 18:12)

1. Institut mikrobiologii AN SSSR. Submitted Jan. 16, 1965.

CHERNAVSKIY, D.S.; IYERUSALIMSKIY, N.D.

Determinative link in the system of enzyme reactions. Izv. AN SSSR. Ser. biol. no.5:666-676 S-O '65. (MIRA 18:9)

1. Fizicheskiy institut im. P.N. Lebedeva AN SSSR i Institut mikrobiologii AN SSSR.

IYERUSALIMSKIY, N.D.; SKRYABIN, G.K.

Problems of the microbiology of hydrocarbons. Izv. AN SSSR Ser. biol. 30 no.1:53-57 Ja-F '65. (MIRA 18:2)

1. Institute of Biochemistry and Physiology of Microorganisms of the Academy of Sciences of U.S.S.R.

L 23373-66 EWT(1)/T JK

ACC NR: AP6014018 SOURCE CODE: UR/0220/65/034/001/0073/0078

AUTHOR: Iyerusalimskiy, N. D.--Ierusalimsky, N. D.; Shaforostova, L. D.; Balashov, V. I.

ORG: Institute of Microbiology, AN SSSR (Institut mikrobiologii AN SSSR)

TITLE: New principle for regulating the composition of media used in continuous culturing of microorganisms

SOURCE: Mikrobiologiya, v. 34, no. 1, 1965, 73-78

TOPIC TAGS: microbiology, cell physiology

ABSTRACT: In flow-type apparatuses based on the chemostat principle, sooner or later a dynamic equilibrium is established between the multiplication of cells and loss thereof in the liquid flowing out. The population and growth rate of the cells, their morphophysiological properties, and composition of the culture fluid become stabilized at some constant level. Any change in the flow rate entails a change in the composition of the medium. Yet for precise physiological investigations it is important to be able to vary only individual external factors, leaving the others unchanged. To achieve this purpose, the authors proposed a new device (here described in detail and illustrated) permitting independent regulation of the amount of several solutions making up the medium. It worked efficiently in continuous culturing of Bac. megatherium for 2½ months in a medium consisting of gluconе, NaCl, $MgSO_4$, K_2HPO_4, sodium citrate, ammonium succinate, NH_4Cl, $CaCl_2$, $MnSO_4$, and

Card 1/2 UDC: 576.8.093.1

L 23373-66

ACC NR: AP6014018

tap water. The flow rate was maintained throughout at the prescribed level. Such indices of the process as optic density of the culture and content of residual nitrogen and sugar in the culture fluid remained stable at each flow rate. The pH was virtually unchanged. Orig. art. has: 1 figure and 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 01Feb64 / ORIG REF: 002

Card 2/2

KHMEL', I.A.; GABINSKAYA, K.N.; IYERUSALIMSKIY, N.D.

Growth and nitrogen fixation by Azotobacter vinelandii under different aeration conditions. Mikrobiologiia 34 no.4:689-694 Jl-Ag '65. (MIRA 18:10)

1. Institut mikrobiologii AN SSSR.

IYERUSALIMSKIY, N.D.

Theoretical and industrial aspects of microbiological synthesis.
Vest. AN SSSR 35 no.4:42-50 Ap '65. (MIRA 18:6)

1. Chlen-korrespondent AN SSSR.

IYERUSALIMSKIY, N.D.; NERONOVA, N.M.

Quantitative relationship between the concentration of exchange products and the growth rate in micro-organisms. Dokl. AN SSSR 161 no.6:1437-1440 Ap '65. (MIRA 18:5)

1. Chlen-korrespondent AN SSSR (for Iyerusalimskiy).

L 2676-66 EWT(1)/EWA(j)/EWA(b)-2 JK

ACCESSION NR: AP5021288 UR/0020/65/163/005/1266/1269

AUTHOR: Stepanova, N. V.; Romanovskiy, Yu. M.; Iyerusalimskiy, N. D. (Corresponding member AN SSSR)

TITLE: Mathematical model of the growth of microorganisms in a continuous culture

SOURCE: AN SSSR. Doklady, v. 163, no. 5, 1965, 1266-1269

TOPIC TAGS: bacteriology, mathematic model, differential equation, oscillograph

ABSTRACT: Tests with continuous cultures have shown that the basic features of biomass growth may be described knowing only the following values: concentration of the culture medium at its minimum, concentration of the inhibitor affecting the minimal rate in the biochemical order of reactions, and concentration of the biomass. The mathematical task thus consists of constructing and studying systems of kinetic differential equations, and the values of the coefficients in such systems may be obtained from the test itself. A model was constructed based on Propionibacterium shermanii grown in a culture medium with lactate as the carbon source. Given was the

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culture medium concentration S_0 entering the cultivator at rate F. The mixture of nonreacted lactate, biomass and fermentation products left the container at the same rate. The dilution coefficient $D = F/V$ characterizes the washing out of the biomass from the cultivator (V is the volume of the cultivator). The rate of change of concentration X of the biomass in the cultivator is expressed by the equation

$$dX/dt = -DX + \mu X. \quad (1)$$

where μ is the specific rate of growth, a nonlinear function of S which also depends on the concentration of P, one of the fermentation products (propionate). This formula is further developed to arrive at a system of equations which connects concentration of the biomass, culture medium, products of vital activity and their derivatives. Curves plotted on the basis of these equations closely approximated experimental curves. For the study of transitory processes appearing with a change in system parameters, a solution of the above system of nonlinear equations was required, and was obtained using an electron model. Processes of adjustment in the system may be determined with an oscillograph with photo attachment. The oscillograms

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explain to a certain extent the nature of equilibrium stability. Further refinement of this method, including more accurate coefficients and introduction of factors characterizing bacterial inertia, will permit a more thorough study of the system's behavior and of biomass growth problems. Orig. art. has: 3 figures and 9 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University); Institut mikrobiologii Akademii nauk SSSR (Microbiology Institute, Academy of Sciences, SSSR)

SUBMITTED: 23Apr65 ENCL: 00 SUB CODE: LS, MA

NR REF SOV: 002 OTHER: 001

Card 3/3

ACC NR: AP6033914 SOURCE CODE: UR/0220/66/035/005/0920/0922

AUTHOR: Iyerusalimskiy, N. D.; Yeroshin, V. K. 19 B

ORG: none

TITLE: Report of the symposium on microbial physiology and noncontinuous culture methods

SOURCE: Mikrobiologiya, v. 35, no. 5, 1966, 920-922

TOPIC TAGS: biologic conference, microbiology, microbe physiology, laboratory method, biologic metabolism

ABSTRACT: An international symposium on microbial physiology and noncontinuous culture methods was held in Porton, England from 28 March to 1 April 1966. Fourteen participants including N. D. Iyerusalimskiy and V. K. Yeroshin from the SSSR were present. Subjects discussed included factors limiting growth under culture conditions, utilization of carbon sources, and respiration and metabolism *in vitro*. [W.A. 50]

SUB CODE: 06/ SUBM DATE: none

Card 1/1 nst

PHASE I BOOK EXPLOITATION SOV/4226

Riga. Universitate

Uchenyye zapiski, t. 14, Khimicheskiy fakul'tet, 4 (Scientific Notes, Vol 14, Chemistry Faculty, 4) Riga, 1957. 251 p. 550 copies printed.

Eds. (Title page): A.F. Iyevin'sh, Professor, Doctor of Chemistry; L.K. Lepin', Member of the Academy of Sciences Latviyskaya SSR, Professor, Doctor of Chemistry; G.Ya. Vanag, Professor, Doctor of Chemistry; Tech. Ed.: A. Peterson.

PURPOSE: This book is intended for inorganic chemists and scientists in the ceramics industries.

COVERAGE: The book contains 22 articles on organic chemical synthesis and analysis and the physicochemical properties and compositions of ceramic and refractory materials. No personalities are mentioned. Figures, tables, and references accompany the articles.

AVAILABLE: Library of Congress

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9/29/60

KASHKAY, M.-A.; SELIMKHANOV, I.R.; IYESSEN, A.A., red.; VISHNEVETSKAYA, I.A., red.izd-va; AKHMEDOV, S., tekhn.red.

[Analyzing metal articles of ancient Mingechaur dating to the era of developed bronze] Issledovanie metallicheskikh izdelii drevnego Mingechaura epokhi razvitoi bronzy. Baku, Izd-vo Azerbaidzhanskogo univ., 1959. 45 p. (MIRA 13:4)
(Mingechaur--Bronze age) (Bronze analysis)